

Delbert Philpott, Ph.D.

Biographical Statement

Dr. Philpott was born on September 24, 1923, in Loyal, Wisconsin. He earned his B.S. and M.A. degrees in chemistry (1948 and 1949) at Indiana University and his Ph.D. in cytology at Boston University (1963). During World War II his U.S. Army infantry unit was the first to link up with the Russians at the Elbe River in 1945, a momentous event that signaled the end of the war. That event continued to be meaningful in Dr. Philpott's career as a National Aeronautics and Space Agency (NASA) scientist, when his historic WWII link with the Russians became the catalyst for several endeavors involving cooperation between the Soviet and American space programs.

While at Indiana University Dr. Philpott learned electron microscopy techniques, and subsequently (1949-1952) perfected them as a Research Associate at the University of Illinois Medical School. In 1952 he became Head of the Electron Microscope Lab for Albert Szent-Györgyi's Institute for Muscle Research at Woods Hole, Massachusetts, a position he held until 1963. He then became Assistant Professor of Biochemistry at the University of Colorado Medical School, and then, in 1965-1966, Head of the Department of Electron Microscopy for the Institute of Biomedical Research at Mercy Hospital in Denver, Colorado. In 1966 he became Head of the Electron Microscopy Lab at NASA-Ames Research Center, Biomedical Research Division, Moffett Field, California. Dr. Philpott has won numerous awards for his many contributions to the field of electron microscopy and has been active as an officer and member of several professional societies.

Interview Synopsis

In this lively and anecdote-filled interview, Dr. Philpott describes daily life at Albert Szent-Györgyi's Woods Hole laboratory from the years 1952-1963. As a year-round employee of Woods Hole's only year-round (then) lab, and as the institution's expert on electron microscopy (a resource whose use was sought by the entire facility), Dr. Philpott was in a unique position to observe the rhythm of the small community's summer seasons and "off" seasons, especially the annual influx of scientists for summer work. He also offers several insights into the organization and administration of Woods Hole Marine Biological Laboratory in those years.

Through numerous examples, Dr. Philpott illustrates Albert Szent-Györgyi's unique outlook on life, his sense of humor, his scientific acumen, and the various ways in which his assistance and support inspired loyalty among those who worked with him. In the course of this recounting, Dr. Philpott describes several scientists who visited Szent-Györgyi at Woods Hole or who worked with him for varying periods of time in the 1950s and early 1960s. These descriptions include not only the subjects of their research but also some of the informal parties and recreations that Szent-Györgyi regarded as vital for morale as well as for the rejuvenation of creative thinking.

National Library of Medicine Oral History Project
Interview with Delbert E. Philpott
Conducted on June 3, 2004, by Adrian Kinnane
in Sunnyvale, California

AK: As I mentioned, we'll get a conversation going here between the questions I have and the points that you have prepared. Thanks for doing that, by the way.

DP: Yes, sure.

AK: Now, you were fourteen years old when Albert Szent-Gyorgyi won the Nobel Prize for his work on ascorbic acid.

DP: That's interesting.

AK: And then when you were twenty-nine, in 1952, was when you moved to Woods Hole from a position at the University of Illinois Medical School, where you were developing and applying techniques of electron microscopy.

DP: Right.

AK: How did you learn of the position at Woods Hole? How did you come to be there?

DP: Oh, that's really interesting because I got a call from somebody that worked at another school in Chicago, I'm sorry I've forgotten his name, and he said that he was in an electron mic lab and needed to learn something about electron microscopy and understood I was making some breakthroughs on sectioning, because we couldn't cut ultra thin sections yet. They had techniques and could he come and learn a little something from me, so I said, "Sure."

So he came over, and for a full day I raced around knocking myself out to teach him. Near the end of the day he smiled and he says, "Well, actually, I know a lot of this stuff, but I got a call from Dr. Albert Szent-Györgyi saying he's looking for an electron microscopist and I've actually been interviewing you. [laughs] He said, "How would you like to work for Dr. Szent-Györgyi in Woods Hole? I was standing there with my mouth hanging open, thinking, "Hmmm, sounds like a pretty good idea." Prof wrote to me then and the reason that I felt I just had to go and work for him is he, in the letter he hand-typed, there wasn't room for the period at the end of the sentence, so he put the period at the beginning of the line for the next sentence. Now, I all my life have looked for the little things people do because it's the key to their true personality. When I saw that, I can remember saying, "Got to work for him."

AK: Tell me why. What did that tell you?

DP: It told me about his personality, and that he was just a really straightforward, normal honest guy with no pretense, but he was going to get to the point of really what he was doing. I felt, "Boy, I've been at the University of Illinois for three years. It's all back-biting. People are having heart attacks. If you make a change in a little book or something, and you don't go properly through every channel, it's hell to pay for months and months." I said, "I just couldn't believe that adults can behave the way that people have been behaving at this university." I said, "It's got to be the life I'm looking for."

AK: Okay. Had you known of Szent-Györgyi before this?

DP: Oh, yes.

AK: How so? Through what?

DP: Well, the fact that he won the Nobel Prize in chemistry. I actually—because I did not have a Ph.D—I left with a Master's degree from the University of Indiana, with the idea that I could be a big fish in a little pond if we could break through on ultra thin sectioning. I always believed anything the mind can think of, the body can do. Therefore, it can be done, even though the Chairman of the Department of Chemistry at IU called me in when he found out what I was going to do, and bawled me out. He says, "You're an idiot, you know, for doing this. In two years that microscope will disappear. It will be obsolete. It will be gone. You will have thrown away a promising chemistry career." Nothing made me more

determined to go, and he says, "And besides, you'll starve." Well, for the three years I was there I starved at three hundred a month, but I published a paper that Prof had seen and that was what got Prof to that guy to me, because it had muscle pictures in it.

AK: Okay.

DP: And when I got the letter from him, I said, "I'll send you pictures so you can look at them." I belonged to a photography club and had always been interested in and good at photography and I was entering international competitions, so I knew how to really print. So I sent him 16 X 24s with number fourteen prints on it, but it took a couple weeks. Well, in that length of time, Prof sent me a letter and said, "Don't call me, I'll call you," and my friends said, "Oh, that's too bad. You lost the job." I said, "Like I hell I did. He gets the pictures, I'm going to hear from him." [laughs] Zoom—"Come out immediately."

AK: So you went there and that was your first meeting with Szent-Györgyi ?

DP: The first one and it was very informative because when I got there, he sat on the porch in there and there wasn't another chair right by him, so I sat on the floor by his feet.

AK: Was this in his house or . . .

DP: In his house there, Seven Winds, and I said—he started to talk and I said, "Wait a minute." I said, "I've got to tell you something up front. I don't have a Ph.D. and if that Ph.D. means something to you, I don't want to be interviewed under false pretenses. I want you to know right away, because where I come from, at the University of Illinois, even at lunchtime everyone has to sit according to rank. The lowest on one end, the chairman on the other," and I said, "It's that kind of a life." He put his arm around me and he says, "I'm looking for brains. I'm not looking for paper," and he says, "If things work out, I will help you get your Ph.D."

Ten years later, after I'd published fifty papers and we'd had a lot of fun, especially with that—I got to tell you that story—he came in with a smile on his face and he says, "I'm only one person. I only have a small institute. I'm really working on cancer, not muscle," and he says, "It's time in your life to get your Ph.D." Then I went up to Boston University. A guy hired me part time because I had to have a job, but it was a fake. He was trying to play me off at Mass General Hospital to get to the [electron] microscope. I don't know why, but he was on the outs with everybody up there and he thought he could do that. Well, he couldn't.

AK: This is the guy who hired you at BU?

DP: Yes, and as each week went by, my money was disappearing, so I went into the Chairman there at BU in the Biology Department and I said, "Look, this guy over at Mass General

hired me and we haven't seen him. You've got to call him on the phone right now. You've got to make him come over here and we've got to face him down. Either I have a job or I don't." So he called him over and the guy had to admit he didn't have a job.

So then I didn't even sleep that night, and the next day I went back to Woods Hole, went back to Prof and I said, "I'm in trouble. I can only make it to the end of the semester." I told him what happened and I said, "I spent the whole night trying to figure out what I might be able to do," and I said, "If I can work for you three days a week, one of them can be Saturday if necessary, but I'll give you your full amount of time, and then work in the summer like I did before running the electron mic lab," I said, "I can make it." He put his arm around me—geez, it almost brings tears to my eyes even now. And he says, "Are you sure that's enough?" God, I really choked up, but like he said, he would help and he did.

AK: This was 1960 to '63 period?

DP: Yes.

AK: Let's go back a bit. I was going to ask you what your first impressions of him were, but you had already formed an impression of him before you even met him, based on the way he wrote that letter, he typed that letter.

DP: Yes, yes.

AK: How about when you met him, how did he strike you?

DP: Well, when we were there on the porch he said, "I have a better place for the interview, come with me." He threw a bathing suit at me, and I hadn't eaten supper. I hadn't eaten breakfast. I was hollow, thank God. I couldn't sink. He says, "We'll swim out to the raft and we'll have the interview on the raft." So we swam out to the raft. He was out there way ahead of me. I finally made it, gasping, got up on the raft. He said, "What do you think," and I looked around and I said, "Dr. Szent-Györgyi,"—I hadn't established that he was "Prof" yet—"this is the most clever interview I've ever been on. Those that don't make it to the raft drown, go out to sea. It's all taken care of. Those that make it probably work for you." Again he put his arm around me. He said, "You're going to do just fine."

AK: He was sixty-two years old about at that time.

DP: I guess.

AK: He was always pretty healthy, wasn't he?

DP: Oh, yes. Have you been out there at Penzance Point?

AK: I have not.

DP: Well, it's very narrow. One of my pictures will actually show it. He calculated that as the tide goes through, if you just swim out to the tide, it will take you through to the other side, and then you just have to swim back. But he forbid any of us to try it. He said it was too dangerous, but he was really healthy. In fact, he took me fishing, you know, right there, just for a little bit to show me what's doing and he whipped back—he had given me a pole and he had one. He whipped back and gave it a real hard whip and it broke his pole. He looked at me and he says, "Now, aren't you glad you're not the one that broke it?" He says, "I can't yell at myself, but I could yell at you." [laughter]

AK: Well, now, you started there at Woods Hole working for the Institute for Muscle Research.

DP: Right.

AK: But you were year round.

DP: Yes, I was year round and the deal was that I would work for the MBL in the summer, and I knew enough . . .

AK: The Marine Biological Laboratory?

DP: Yes, and I knew enough to immediately say to Prof, "The best way to arrange this, if you can, is to have one person pay me year round. If it's possible, then I'd like to have you be

the one that pays me the year round, while I work for the MBL." And he said that's the way he had planned to do it, and it was excellent because people would come and, as I told you, at that time I didn't have a Ph.D. They would go to the library and the librarian would always tell me about this. They'd come in and want to look me up to see what I had for degrees before they came to work with me. Then they would decide what they wanted me to do and they would go to Prof and tell Prof that "This is what I want you to tell Philpott to do," and Prof would say, "Why are you coming to me? He's running the lab. He has complete authority over it. I have none. What he says goes." So then they would come in sheepishly and talk to me. That worked. It worked perfectly.

AK: You mentioned before we started recording an arrangement whereby the Institute for Muscle Research had paid for the electron microscope, but the professors or researchers who were there during the summer would use it.

DP: Right. I'm not sure who paid for the electron microscope. I know that Dr. Parpart at Princeton and Dr. Jim Hillier at RCA wanted to have an RCA microscope at the MBL and Dr. Szent-Györgyi was supporting the idea. Dr. Hillier actually came to the MBL and was installing it when I came there. He was the major designer of that microscope and let me help him put in the latest design improvements which weren't even on the commercial ones. I'm sure that RCA made it easy for that group to purchase it. I was really lucky. After he went over my background, he said, "If there is anything you don't know, I'll teach it to you. You'll do just fine."

AK: And then for the rest of the year it . . .

DP: Nine months in the year it belonged to the Institute.

AK: Right, who had paid for it?

DP: I think that RCA wanted to get a microscope into the MBL.

AK: I see. Okay.

DP: And they made a deal with the MBL and got it there really cheap.

AK: I see. So you would then operate it for researchers during the very busy summer months.

DP: Right.

AK: And in return the Institute for Muscle Research had it the rest of the time.

DP: The deal was that I had to run it, even though somebody might come in that had experience running one because we had to have it unbroken in the fall.

AK: Yes.

DP: So I ran it, and boy it was tough to handle that many people. At the end of the first summer, Prof offered to buy me a sun lamp. I hadn't been on the beach once.

AK: My goodness.

DP: I would use the weekends to do the repair and the cleaning and all the stuff that needed to be done. I felt I was representing Prof as the person that was in there, and anything I did could reflect on him and I wanted it to be the best it could.

AK: Yes. What were relations generally between the IMR and the MBL? Cooperative?
Cordial?

DP: Yeah, it was good. It was good.

AK: It sounds as though this arrangement about the electron microscope was sort of an example of how things worked between the two?

DP: That brings up a point that I think will help to illustrate one of the major things you're looking for, and that is how did Prof get people to be so intensely loyal. I didn't have a Ph.D., remember? Whenever I met the Director of the MBL in the hall, he never looked at me, he never spoke to me. I was nothing with him. Now, Fritioff Sjöstrand was the first to cut ultra thin, really ultra thin sections and became famous at that time for doing it. I felt he

would be an excellent candidate for a Friday night lecture at the MBL because they had important people Friday nights all through the summer.

So I wrote to him and asked him if he would be interested and he said, "Oh, yes, I'd really be interested in coming up there, and can you introduce me to Szent-Györgyi because he's been a hero of mine?" I said, "Oh, sure, I can do that." So he got invited to come and give a Friday night lecture, and I also introduced him to Prof. Prof said, "Well, I won't be there. When you get through with your reception, I'll be home, but come on out. I'll have things fixed up for you." So I stood in the back of the hall, not invited to the reception and Sjöstrand, when he finished talking, rushed back and got me and says, "Let's go to my reception." I said, "I'm sorry, but I haven't been invited."

So the MBL Director came back to Fritioff to take him to it and Fritioff says, "Well, Philpott's coming to the reception, too, isn't he?" and the Director looked at me and he says, "I'm sorry, but he's not wearing a tie, so he can't come." Fritioff took his tie off and put it in his pocket and says, "I'm not wearing a tie, either." And so the Director had to say, "Well, um, eh, em, uh, well, yes, of course you're going to be able to come." So I did, and of course, Fritioff is now staying out with Szent-Györgyi 3.. He gets there, Prof is in bed, on the chalkboard it says, "There's a flashlight tied to a string. Take the flashlight, follow the string, go up the stairs and it's tied to your bed. I'll see you in the morning." [laughs]

Now, comes, you know, what you're looking for. He told Prof what had happened. Now, a boss can, if he wants to, go to the guy and chew him out, right? But not Prof. That's not how he worked. I got an invitation to come to a beach party with Fritioff, the director of the Naples Marine Biological Laboratory, director of one on the east coast. The Director of the MBL and two Nobel prize winners. And me. He never said a word to the Director, but implied by his action that, "This is my boy, and he's equal." After that, when I walked down the hall, whether it was a crowd or a single, there was a smile on his face. He stopped and he talked to me. Now, that's I think as good an example as you can get why you would be fiercely loyal.

To give you another touch to it, later on I was on an airplane coming back to Boston, sitting aside of somebody I'd never met. "Where do you work?" "Woods Hole, work for Prof." "Oh, Prof. I hear he's blah, blah, blah." Well, immediately in my mind I said, "Well, this is the only thing I'll ever be able to do for Prof is defend him if anybody tries to knock him down, see?" So I—as far as I can remember, I enthusiastically straightened him out. Two days later I'm walking down the hall and this guy's in there talking to Prof. "Geez," I said to myself, "this guy's got nerve, the attitude he had and he's here talking to Prof." After the guy leaves, Prof comes running down to my lab with a big smile. He says, "Del, I don't mind if you straighten people out, but I wish you wouldn't threaten to beat the hell of them." [laughs]

AK: That is loyalty. I'd like to talk about two big topics now.

DP: Sure.

AK: In the course of that, maybe we can fit some of the topics on your list.

DP: Oh, sure.

AK: One would be the actual work and the kinds of projects that you were doing with Szent-Györgyi at the IMR, and the other one is the style or the atmosphere of the lab, the kind of things that went on, both during and after work. Maybe we could start with the kinds of projects that you were working on with him during those ten to thirteen years that you were involved.

DP: Yes. Well, I went there of course with the idea it was the Institute of Muscle Research and Prof was working on muscle and had come with the idea of glycerinating muscle and it still would work. So I worked on glycerinated muscle, the structure of glycerinated muscle and then I got to working with Csuli who isolated light meromyosin. That was a protein and it was dogma that a protein so highly hydrated could not be dehydrated and photographed in the electron microscope. It took me a year of trying everything I could think of, including checking the tide tables—[laughs] honest to God! You know, the temperatures, anything we could think of I kept trying and trying and trying and trying, until I finally succeeded in getting the pictures of the light meromyosin. I had carefully calibrated the electron

microscope and then I took lots of pictures to get the average. Came up with 420 angstroms, I think it is, for the period. We published. That was kind of a sensation.

AK: This is Csuli or Andrew, Albert's cousin Andrew Szent-Györgyi .

DP: Yes. He was like a brother to me. And a year later, was it MIT? No, Mass General, I think, did the x-ray work on it and of course the x-rays are going to be exact, and I think I was within three or four angstroms and they sent me a letter saying, "We thought you'd like to know..." Those are moments you don't want to work anymore that day for fear you'll hurt yourself. [laughs]

AK: Can't get any better. It could get worse. So your work primarily was with electron microscopy and the extent to which that was applicable to a variety of research projects that were going on.

DP: Well, yeah, because I worked with the people that came in from all over the world.

AK: Right.

DP: And actually published with a number of them because they felt I'd made it successful for doing it. Worked with George Wald who later got a Nobel Prize for his work on the retina. We found the periodicity in the retina, independently of Sjöstrand and had written it up for

publication when Sjöstrand's publication came out. [laughs] He scooped us. But it was a lot of different people and they were coming from, you know, Japan, Italy, France. You name it, they were coming from all over, and in the summer I literally didn't get out of the lab, so I didn't really even see Prof much.

So I got an idea, so I got some postcards and I said, "I'm having a fine time here, wish you were here," and addressed them to Prof, and when they would leave to go back to their country, I'd say, "Would you mail these for me?" [laughs] It happened that two or three of them came in pretty close together and he came roaring into the electron mic lab one day and he said, "Oh, you're here. Oh, ya, you are here. You really are. Yes, you really are here. You are here, aren't you?" I kept sitting there smiling and finally he just shook his head and he said, "Hmm, not bad," and walked out. [Laughs]

AK: He had a sense of humor.

DP: Oh, yeah.

AK: You had mentioned that April Fool's Day was a big day in Hungary.

DP: Oh, yes, and of course he made it a big day over here with our group—anything that could add to the esprit de corps of a small group. See, I'd once asked him, "What's your secret of success with this group of people?" because I'd come from the University of Illinois where

it was, you know, dreadful. He says, "Well, it has to be run like a family," and he says, "When I interview someone, I don't interview them just for what they know. I have an eye on them for how they're going to work out as part of the family, and they've got to pass that part in order for me to have them come here."

AK: And to keep morale up, for instance, if people weren't working as hard as they should or as hard as he thought they could, he wouldn't chastise them. Instead . . .

DP: No, never.

AK: Instead he would . . .

DP: He felt that things—he said, "It's a sine wave that's going on." He said, "It's time to have a party." So then he would throw the party out there at his place and of course invite people from different places. It would be a big group with a lot of people that are well known and would come to it. You'd have a marvelous time. Your enthusiasm for your group obviously came way up. Like I was saying, it would spill over so completely that on Monday when we'd be working, we'd be saying, "Well, we know we've been had, but there's no other place you could be had like this! We're going to work."

AK: Positive motivation.

DP: Positive motivation. He was really astute in those types of things.

AK: And you're another example of that, perhaps. Your office was down the hall from his?

DP: It was on the second floor, and he was on the third floor.

AK: The third floor.

DP: So he would go down a floor and then come down a little ways, and then come into mine. When he came in looking for me—one time, remember, it's a big place and to get any supplies, you had to get down the basement over to supply and see if you could get like radio tubes or something like that, or another place had all the chemicals. So you weren't always in there and there was nobody else working for you. So you're not there, and one time he finally found me and he kind of blurted out, "Well, I've been looking all over hell for you," and I said, "Maybe that's why you didn't find me. I wasn't there." And I said, "Well, I'll think of some better way."

So then I made a card that had a dial on it and as you turned the dial it would say "Library," "Supply," whatever. So any time I left, I would just dial that, so that anybody that came looking for me could look at it and see it, and I learned something about human nature. I left a blank so that I could fill something else in. You're ahead of me. Every wise guy started filling it in, see, so I couldn't do that anymore. [laughs]

AK: You had a great view, I think, right out the window?

DP: Fantastic out there. You look out at Martha's Vineyard. I would see the sailing boats. A lot of them were Cape Cod knockabouts which I guess was the most popular sailing boat and maybe still is, and I thought, "Well, everybody has one. When somebody comes, they take them for a ride. I'll have to learn." So I got somebody to take me out. I got salt spray in my sunglasses, so I couldn't see and the boom hit me in the head twice. I had a headache. We came in. We had a lot of work to do with drying the sails and stuff. I looked up and an airplane flew over and I said, "That's the way I'm going," and I bought an airplane.

AK: And you flew many of the scientists who came to Woods Hole? You took them on a trip?

DP: Oh, sure. Talk about motivation. Paul Gross, who later became a director at MBL, was a very good friend of mine. We published some stuff together, spindles and liver regeneration and stuff, and I said to him—"Now, I helped build this small, little one-strip airport at Falmouth. A few of us have airplanes there. If you'd like to take your coffee break in Martha's Vineyard, I know how to do it." We'd come in an hour early in the morning, start work. Gets close to coffee time, we hop in the car. We go out to the airport. We grab my airplane. The minute I get up in the air, it's eight minutes from one airport to the other, I call on the phone. I've got an arrangement with them. They answer me in the cafeteria. I order what we want. I tie up the airplane. It's sitting on the counter when we

get in there. We have our coffee. We get back out, get in the airplane, come back. We'd come back and a lot of times people would come in like, oh, ten thirty, quarter of eleven and say, "How about going down to the drugstore for a cup of coffee?" and we'd smugly say, "No, we've already been to the Vineyard for ours." [laughs]

AK: Did you ever take Szent-Györgyi up in the airplane?

DP: No. He never asked. I was always afraid to ask him. Being the boss, I felt it was up to him if he wanted to go. I never took Csuli because being a relative of his, it wasn't that I didn't want to take him. I would love to have taken him. We were very close. I made semi-subtle hints about going here, going there and so on with it, but he never took me up on it and I was so afraid. You know, I was a commercial pilot and I could fly for a commercial airline if I wanted to, and I even taught flying some. There were a billion to one odds against an accident and I still didn't want to play them. If he'd really wanted to go and asked me, then we would have gone. But just about everybody else went up.

In fact, Alfred Chaet's wife would meet him at every airport when he came home from every lecture, with a newspaper under her arm, tears in her eyes. There was some air crash in Timbuktu she had found and she was a basket case. He said, "What will I do?" I said, "Wait, she's never been up. If she goes up once, it will cure her. Bring her out to the airport, but don't tell her we're going to take her flying." So we get a crew to go out, there's a bunch of people. She's among the people and I explain the airplane to her and so on and

then I say, "Well, I'll take up one group. Then I'll come back and I'll explain a little bit more about the airplane."

Well, when I took off, I realized it's lunchtime. So I called Martha's Vineyard, they packed a lunch, went over and landed, picked up the lunch, came back, got out of the airplane. I got out. I had hamburgers, I had malted milks and it just blew her mind. She could not figure where in an airplane gone for the exact number of minutes I told her we'd be gone so she wouldn't have a newspaper under her arm. Now, while she's totally bewildered, I'd say "Well, let me show you some more about the airplane." I said, "Why don't you get in, so I can explain the instruments." So I explain the instruments and this is how we start, and I started it, and I just kept her occupied. I taxied out. I took off with her, did a very soft, careful ride around, came back, kept talking, landed, talked some more to her, let her out. She was cured.

AK: I wanted to get back to the view from your office because Szent-Györgyi told you . . .

DP: "You're recharging your battery."

AK: If he ever catches you . . .

DP: He stood right beside of me and he pointed out there at some of the sailboats. He said, "Any place else, if I walked in and you were working for me and you were just staring out

the window, you'd be goofing off and I'd have to say something. But here," he says, "I know that when you look out there, you're recharging your battery."

AK: Now, I suspect he did something similar, that he enjoyed moments of thoughtfulness, and that not all work occurred staring through a . . .

DP: Well, he told me that the reason he—see, he said he had half of his Nobel Prize money left when he came here, and when he saw the house for sale on Penzance Point, even though it would cost him a lot, he immediately—this is part of his genius—he could always make the right decision immediately. He immediately said to himself, "This is the spider web that will be the best place I can ever be because no one will be able to come out here, stay here, listen to the seagulls calling, the buoy dinging out in the ocean and not say 'this is the best place for original thought that anybody could ever find.'" And he said, "This will really be the spot. It will help everyone, including myself," and it was true. You know, you go out there and it was just fabulous.

AK: Yes. Now, he never accepted, and I suspect maybe wasn't interested in formal academic appointments anywhere.

DP: Princeton offered him—when he came over looking for a place, Princeton offered him a blank check, if he would come there, and he said, "Along with the blank check, you're offering me every committee you can put me on, and then I haven't got time to work." He

said, "I want some place where I can work," and when he saw Woods Hole, it was ideal but nobody would give him any money. Now, Stephen Ráth, and his pictures are in here some place . . .

AK: Yes.

DP: Was a pharmaceutical millionaire in Hungary, grabbed by the Russians and hauled off to Russia. Prof wrote to Stalin and said, "My friend, Stephen Ráth, is in Russia and I want you to let him out, and if you don't let him out, I'm a Nobel Prize winner, I'll tell the world and the world will listen to me." Out came Stephen Ráth, see. So he freed Stephen Ráth, who still had access to some of his money, so to get started in Woods Hole, it was Stephen Ráth who funded Prof. Then Prof went to Armour. They called it meat and he called it muscle, and so Armour—and I may not be right on the money, but I think it was like a hundred thousand a year that Prof got from them to fund his research and his institute while he could build the institute and get funding.

AK: Yes.

DP: So he could get the funding coming, because I remember one time there was an Englishman that had a little MG with the top down and he would pick up the mail and then zoom over to the lab and there where the inlet comes in and the Coast Guard is, the road drops off very rapidly. Well, the wind blew all the mail out and a check for twenty-five thousand was in

it. So he rushed the rest of the way to the MBL and reported it, got everybody at the MBL to come down and start going down the hill getting the mail, collecting it until we found the check. [laughs]

AK: I like the way you put that: they called it meat and he called it muscle. [laughter]

DP: He sent me to Chicago to get samples of light cutter and dark cutter meat because it tastes exactly the same. Everything is the same except looks. Now, they could not sell the dark cutter meat for anywhere near the price they could sell light cutter meat. The only sort of clue they had was in shipping maybe it got banged around and so on. So the idea was to look at the muscle under the electron mic, as well as him with biochemistry, to see if he could solve the problem of light cutter, dark cutter meat. So that was one thing that was being done for Armour. I looked at it structurally and it was identical, which you'd probably expect. However, it did precipitate osmium tetroxide, which the light cutter meat did not do. So it was a chemical indication that something had changed that way.

AK: Was there any practical benefit to Armour that came out of any of this?

DP: Well, I was only involved in it from that standpoint. He went and gave a lecture or two or something like that with Armour. I really don't know.

AK: There was funding also from the American Heart Association.

DP: Oh, yeah. When he got rolling, he got lots of funding coming in.

AK: And in 1954 he won the Lasker Award, and you were there then.

DP: Uh-hmm.

AK: Can you tell me a bit about that? There must have been a celebration.

DP: Well, yeah. You have the pictures. You have the pictures of the celebration for it. He always felt that it wasn't him, it was the Institute. It was the entire group pulling together that produced everything. So for that reason, he threw the party and had the Lasker Award thing up above and told us a little bit about it. He, of course, published papers. He published books that all backed it up, what he was doing with it.

AK: Had you been involved with some of the work that led to that award of that?

DP: Not directly.

AK: You know, I asked earlier about his lack of interest in formal academic appointments because he could just see what was coming, you know, with committees and all of that.

DP: Oh, yes.

AK: But that doesn't mean that he wasn't a teacher and wasn't doing teaching.

DP: No, not at all. [laughs]

AK: Tell me a bit about his teaching at Woods Hole. Was it all informal? Did he give some lectures?

DP: He gave lectures, for sure, and there was another—in fact, it takes you to make me realize that we had, during the nine months of the winter, we had tea from four to four thirty and, of course, you kind of look at it as, well, that's a way to relax and the group to get together. But ideas were kicked back and forth and his attitude was, there is no such thing as a bad idea. No matter how ridiculous, no matter how stupid, it will lead to something because why did you think of it to begin with, and it will build into something.

The other philosophy, or the philosophy that went along with it was that with that kind of sine wave that you had to the research that you do, whenever you feel like you're kind of up a brick wall, you're not getting any place, what has happened is that you're in a big forest and you have your nose against one of the big trees and all you can see is the bark on this tree. You must realize that at that time, it is time to stop what you're doing, back out of the forest completely, get clear out and take an overall view of everything you've been doing, everything you've been doing, everything you've been trying to do and spend time going over that, not trying to figure out the next step that you're going to do in research, but to get

the big picture because the big picture then will start making some things worthwhile, make some things really small. You'll get the proper perspective on each channel that you could go forward with. So this is how you should channel your efforts for what you're going to do.

AK: And he was teaching then not just about the subject matter of the biochemistry project, he was teaching something about the creative process.

DP: The creative process. The method for doing your work.

AK: He has been quoted in many places as saying that science was sort—doing science was like play.

DP: And I think he made it that way for us, that what we were doing wasn't work. I know when I got up in the morning, I—the first thing I thought about was getting in there and having fun working in the lab.

AK: And at the same time, even though it was creative and it was fun and it was supposed to be fun, there was an extraordinary, even a demanding commitment to an ideal of science, a full commitment to your work.

DP: Oh, yes, certainly—he was fully committed.

AK: How he do that with a group of people? On the one hand, to communicate that this is fun and we're going to have a good time here and there's not a lot of high pressure. At the same time, this is a calling, this isn't just a job.

DP: Yes, yes. Because he was leading the way. He wasn't dragging you along, and you felt that you were in a wonderful group that was, in a sense, so committed that you couldn't miss going for a coffee break or the tea because if you got to working on something and you had an idea, and you were going to go roaring forward with it, you would discuss it with the people you were with. You never had to worry that your idea was going to be stolen by somebody else in the group because everybody was handing ideas to everybody. Everybody had so many ideas, there's no way in the world they would ever care to even do it. Remember, where I came from, it was a different world. I went from black to white.

I can remember, this is a specific instance. Somebody published that radiating hydra improved their lifespan, and so I was thinking, geez, I wonder if ultra structurally there would be any change in the radiation. Hydra would be easy to fix and easy to look at with an electron microscope. So on a coffee break, I mentioned that to one of them and that person says, "Oh, I know the answer. You don't have to waste your time with that. The radiation killed the bacteria that were shortening their life." And it's like [snap], a year saved. It was so many times that one conversation in that group would save you a whole year of work, or put you off on another trail because you'd be talking about what to do.

AK: On the subject of this kind of creative chemistry that Szent-Györgyi was able to do so well in his laboratory and with the people who he attracted to work for him and who he picked to be part of a research family.

DP: Sure.

AK: You had mentioned before we actually started the taping, that he had a bit of a reluctance maybe to hire Americans. You were . . .

DP: The first one.

AK: The first one.

DP: Yes, I was the first American and he was looking for an electron microscopist because EM [electron microscopy] looked like it was going to play a part in muscle structure research, and it just turned out that I was somebody that would fit the bill for that. Then after working for him in the summer there, I kind of found out peripherally that then he changed his mind when it came to, can Americans work as hard as Hungarians?

AK: He changed his mind about Americans not working as hard?

DP: Right.

AK: Uh-huh.

DP: Right, right, and Dick Steele was then hired and Dick was a marvelous person, too, worked out extremely well. Prof made sure that he had his lab right beside my lab because I was by myself. In the winter, it was only the Institute there for quite some time, and so he put him beside me, so we sort of had friendly relations and sight of each other.

AK: He put Dick Steele beside you?

DP: Yes.

AK: Yes. Most of the people around him, then, were people he had brought or he had helped to come from, mostly Hungary?

DP: Uh-hmm.

AK: To the United States.

DP: Right. Yes, and when the Hungarian Revolution took place . . .

AK: In '56, yes.

DP: He picked up a couple people. In fact, that's where he picked up two ladies to come out. I believe that was after Profne had died, and the deal was one was to be a housekeeper for a year, the other one he would fund to go to college for a year and then they would switch.

AK: These were the Felker sisters, I think.

DP: Well, he married one of them, but it ended up that the one that was to help, ended up being his wife.

AK: You mean Marcia?

DP: Is that her name?

AK: Well, Marcia Houston was his wife at the very end of his life.

DP: Yes, that's it. That's the one I'm talking about.

AK: She was an art student at Washington University in St. Louis.

DP: Was that it?

AK: Yeah.

DP: Another Hungarian he got, she had the tattoo on her arm.

AK: From the concentration camps?

DP: Yeah, Nazis.

AK: But in spite of his concerns that maybe Americans wouldn't quite fit in, it didn't work out that way.

DP: Oh, no.

AK: You mentioned Andrew was like a brother to you.

DP: Oh, yeah, like the brother I never had. He was marvelous, just marvelous. In fact, this would be nice to put on tape. I had never, ever heard Andrew say a bad word about anybody, and I mentioned it to somebody that was sitting in my lab and they said, "I never heard him either," and then we got to thinking, "Gee, is there any way we could trap him into saying something bad about somebody?" Well, there was one guy who was, if I used Prof's term, a skunk because he used that a couple of times when people pulled stuff on me. And we got Csuli into the conversation, you know, and popped the question and Csuli

thought for a minute and says, "Well, he doesn't have a good sense of humor," and that was it. [laughs] Oh, touché! One more for Csuli.

AK: That was the worst he could say.

DP: The worst he could say.

AK: Speaking of sense of humor, could you tell me again the April Fool's trick that you all tried to play on him?

DP: Oh, yes, yes. This was marvelous because of the way it worked out. I called New York to a friend, 270 miles away, which is also where Stephen Ráth, the secretary of the Institute, was kept, because Prof didn't want extra paperwork here, and I asked him to send a telegram to arrive on the morning of April 1st, sent to Szent-Györgyi . So they sent it, and it said, "Please disregard first telegram, signed AF," and Szent-Györgyi said to the Western Union person, "But I didn't get a first telegram," and they said, "Well, that's very common. Lot's of times people send one, then suddenly they realize that they really shouldn't have sent it, and so they immediately send one that says 'please disregard first telegram.' So they keep it under the ten words, get the telegram off and that takes care of it." "But I didn't get a first telegram," he said. "Well, we know, but it's very common that one gets ahead of the other one, so we'll call you the minute it comes in. Don't worry, just relax." "Okay," so he hangs up.

Half hour, a little bit later he calls back and says, "I still haven't got the first telegram."

They say, "Oh, Dr. Szent-Györgyi, relax. We know you. We know you real well. We're really looking for it. Anything that comes in, the first thing we look for is your telegram.

We'll call you." "Okay." So he hangs up and this goes on for most of the morning and finally, instead of just agreeing and not thinking about it, Szent-Györgyi starts pacing back and forth and putting his brilliant mind to work. So he starts trying to figure out who this person is. So he's going back and forth and repeating it fairly loud, so you can hear it, you know, "Please disregard first telegram. Signed AF. Please disregard first telegram, Signed AF. AF. AF. April Fool. Oh, dammit!" And Profne confided in me . . .

AK: Profne being Marta, his [second] wife.

DP: His wife, who was just an absolute charm and just like, you know, one of the family. She confided in me that for the first month he would tell that with a bit of indignation to other people, and they would die laughing. Then he realized that instead of getting sympathy, he had one of the best stories he could tell anybody. So then he couldn't wait to tell it to people and laugh right along with them.

AK: Uh-huh. You mentioned wives. Now, I don't want to call it a rule, but he had maybe a policy about wives who were working in the lab.

DP: Yes, because it was good, I suppose, that if they had talent to put the talent to work and not have them just sitting at home.

AK: Andrew's wife, Eva, for example.

DP: Andrew's wife, Eva, and Prof's wife, who was called Profne. The reason for "Prof" was that Prof said, "You cannot pronounce Szent-Györgyi properly. When you use my name, you won't be saying it properly. So that's not good," and he says, "I don't want to be trying to correct it and I don't want you to be saying Professor, because I don't like that term, but Prof will do just fine. So I want everyone to call me Prof, and in Hungarian, if you put a n- e at the end, it makes it feminine. So my wife is Profne and I'm Prof." So this is what they became, Prof and Profne to us.

AK: Did that happen after you got there? Did he decide upon this way of . . .

DP: I don't know.

AK: Because it wouldn't have a problem for Hungarians to pronounce the name.

DP: Oh, no, for the Hungarians, because for example, when I was first there and the only American, and they would have parties, the parties were all in Hungarian. I couldn't understand a word of it and they would be laughing and having a good time and somebody